

**Martha Velázquez-Avila PhD.**  
**PhD in Molecular Biomedicine**  
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Candidate for National System of Researchers (SNI), National Council for Science and Technology (CONACyT), Mexico

## **ACTUAL POSITION**

August 2019-Actual

Postdoctoral Fellow Alan D'Andrea Lab.

Dana Farber Cancer Institute/Harvard Medical School. Boston, MA., USA.

I am focusing on the study of bone marrow failure and DNA repair mechanisms in Hematopoietic Stem and Progenitors Cells (HSPC) in Fanconi Anemia. Fanconi Anemia patients present a progressive bone marrow failure during childhood due to an inherited DNA repair defect, the accumulation of DNA damage in HSPC after a stress condition resulting in the progressive elimination of these cells, compromising the generation of mature hematopoietic cells.

During my Ph.D., I was focus on the study of childhood B- cells acute lymphoblastic leukemia (ALL) and relapse cases. We found that cortactin, an actin-binding protein, is over-expressed in ALL and that it has an essential role in bone marrow relapse and infiltration in other organs. Our investigation was published in *Leukemia* journal and received the Award Dr. Luis Sanchez Medal for "The best research work in hematology" from the Mexican Association for the Study of Hematology (AMEH), as well it is part of a patent in progress.

## **EDUCATION**

2013-2018

### **PhD in Molecular Biomedicine**

CINVESTAV, Mexico City and IMSS-CIBIOR, Puebla, Mexico.

**Project:** The role of cortactin in the transmigration of leukemic precursors in B-lineage Acute Lymphoblastic Leukemia.

2009-2011

### **MSc in Genetics and Molecular Biology**

CINVESTAV, Mexico City.

**Project:** Effect of a negative mutant of  $\beta$ -Distroglycan on the proteins of the nuclear envelope (Lamin A/C, Lamin B1 and Emerin).

2004-2009

### **Bachelor in Chemist Bacteriologist Parasitologist**

National School of Biological Sciences – National Polytechnic Institute (I.P.N), Mexico City.

**Project:** Characterization of genes encoding amylases in *Wickerhamia* sp.

## **PUBLICATIONS**

1. MYC promotes bone marrow Stem Cell dysfunction in Fanconi Anemia. Rodríguez A., Zhang K., Färkkilä A., Filiatrault J., Yang C., **Velázquez M.**, Furutani E., García B., Garza G., McQueen K., Molina B., Torres L., Vadillo E., Pelayo R., Grompe M., Shimamura A., HAutaniemi S., Greenberger J., Frías S., Parmar K., D'Andrea A. *Submitted 2020*

2. High cortactin expression in B-cell acute lymphoblastic leukemia is associated with increased transendothelial migration and bone marrow relapse. **Velázquez-Avila M.**, Balandrán JC., Ramírez D, Velázquez-Avila Mi., Sandoval A., Felipe-López A., Nava P., Alvarado-Moreno J., Dozal D., Prieto-Chávez J., Rotter K., Dorantes-Acosta E., López-Matínez B., Schnoor M., Pelayo R. *Leukemia. 2018*

3. HS1 deficiency impairs neutrophil recruitment in vivo and activation of the small GTPases Rac1 and Rap1. Latasiewicz J., Artz A., Jing D., Blanco M. P., Currie S. M., **Velázquez-Avila M.**, Schnoor M., Vestweber D. *Journal of Leukocyte Biology. 2017*

4. A human lin- CD123<sup>+</sup> CD127<sup>low</sup> population endowed with ILC features and migratory capabilities contributes to immunopathological hallmarks of psoriasis. Mora-Velandia L. M., Castro-Escamilla O., Méndez A. G., Aguilar-

Flores C., **Velázquez-Avila M.**, Tussíé-Luna M. I., Téllez-Sosa J., Maldonado-García C., Jurado-Santacruz F., Ferat Osorio E., Martínez-Barnette J., Pelayo R., Bonifaz, L. C. *Frontiers in Immunology*. 2017

5. The role of actin-binding proteins in the control of endothelial barrier integrity. Garcia-Ponce A., Citalan-Madrid A. F., **Velazquez-Avila M.**, Vargas-Robles H., & Schnoor M. *Thrombosis and Haemostasis*. 2015

6. Production and characterization of extracellular  $\alpha$ -amylase produced by *Wickerhamia* sp. X-Fep. Hernández-Montanez Z., Juárez-Montiel M., **Velázquez-Avila M.**, Cristiani-Urbina E., Hernández-Rodríguez C., Villa-Tanaca L., & Chávez-Camarillo G. *Applied Biochemistry and Biotechnology*. 2012

## SCIENTIFIC DISSEMINATION

2019. Cortactin is a new biomarker in childhood acute lymphoblastic leukemia for identify patients with relapse to bone marrow. **Martha Velázquez-Avila**, Juan Carlos Balandrán, Rosana Pelayo, Michael Schnoor. *Avance y Perspectiva Cinvestav*.

## LABORAL EXPERIENCE

Specialist in Molecular Biology in Medical Selections Company, Specialized Drug Group. **Project: Epidemiology Central Laboratory, Mexican Social Security Institute (IMSS)**.  
September 2011 – July 2013.

## AWARDS

2019. Award Dr. Luis Sanchez Medal for "The best research work in hematology". Mexican Association for the Study of Hematology (AMEH).

2018. Scholarship for IMMUNOMEXICO 2018, ALAI-SMI Congress, Cancun, Mexico.

2016. Best poster presentation. IUIS-ALAI-ONCOIMMUNOLOGY-MEXICO Course. Guanajuato, Mexico.

## PATENT

Cortactin as prognosis marker of B-cells Acute Lymphoblastic Leukemia. Pelayo R., Schnoor M., Velázquez M., Balandrán JC., *In Progress*

## RESEARCH SOCIETIES MEMBERSHIP

Fanconi Anemia Research Fund

## SCHOLARSHIP

2013-2017	National Council for Science and Technology ( <b>CONACyT</b> )
2014-2017	Mexican Social Security Institute ( <b>IMSS</b> )
2009-2011	National Council for Science and Technology ( <b>CONACyT</b> )
2009-2010	Institutional Training Program for Researchers ( <b>PIFI</b> )
2004-2009	National School of Biological Sciences – National Polytechnic Institute ( <b>IPN</b> )

## RECENT CONFERENCES

2019. Scientific Symposium- Fanconi Anemia Research Fund. Chicago, IL. USA

2018. XII Congress of the Latin American Association of Immunology (ALAI) and XXIII Congress of the Mexican Society of Immunology (SMI). Cancun Quintana Roo, Mexico. Poster presentation.

2017. International Society for Experimental Hematology (ISEH) 46<sup>th</sup> Annual Scientific Meeting. Frankfurt, Germany. Poster presentation.

2016. XXII National Congress of Immunology 2016, Mexican Society of Immunology (SMI). Zacatecas, Mexico. Poster presentation.

2016. First International IUIS-ALAI-ONCOIMMUNOLOGY-MEXICO Course. Guanajuato, Mexico. Poster presentation.

2016. XXV National Forum of Health Research, Mexican Social Security Institute (IMSS). Morelos, Mexico. Poster presentation.

2015. Experimental Biology annual meeting. Boston, USA. Poster presentation.

## COURSES

2019. Topics – Life Science Industry and Non-Academic Careers for PhD's. Dana Farber Postdoctoral and Graduate Student Association-Children's Hospital. Boston, USA.

2017. Flow Cytometry. Instrumentation Center, Speciality Hospital, CMN SXXI, Mexican Social Security Institute.  
2015. Flow Cytometry. Instrumentation Center, Speciality Hospital, CMN SXXI, Mexican Social Security Institute.  
2013. WINMDI Program Management Workshop: **1 to 4 colours**. V Congress of Flow Cytometry Applications – **Becton Dickinson**  
2012. Molecular System **NASBA GenoType Mycobacteria Direct– BioMérieux**. Central Laboratory of Epidemiology, Biomedical Research Unit, CMN La Raza, Mexican Social Security Institute.  
2012. Workshop APOPTOSIS II. V Congress of Flow Cytometry Applications –**Becton Dickinson**. National Institute of Respiratory Diseases (INER).  
2012. **LATAM-QIAGEN meeting**. Fiesta Americana Condesa Hotel, Cancun Quintana Roo, Mexico.  
2012. Automatized system to the identification and drug sensivity of microorganisms **VITEK®2 COMPACT - BioMérieux**. Central Laboratory of Epidemiology, CMN La Raza, Mexican Social Security Institute.  
2011. XVIII COURSE of CITOGENETIC. Mexican Society of Genetics. Autonomous University of Mexico (UNAM).

### **SOFTWARES**

Image J, Flow Jo, GraphPad Prism, BioEdit, ClustalW y X, Vector

### **LANGUAGES**

Spanish, English

### **HOBBIES**

Drawing, Reading, Athletics